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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,447	10/29/2003	Christopher C. Beatty	100204750-1	6005

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EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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11/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/696,447	Applicant(s) BEATTY ET AL.	
	Examiner Tony Chuo	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-33,35-41,49 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-33,35-41,49 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Claims 24-33, 35-41, 49, and 50 are currently pending. The amended claims do overcome the previously stated 112 and 102/103 rejections. However, upon further consideration, claims 24-33, 35-41, 49, and 50 are rejected under the following new 103 rejections.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 24-33, 35-38, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kearl (US 2002/0155335) in view of Hata et al (US 6902790).

The Kearl reference discloses a solid oxide fuel cell "10" comprising: an anode layer "18"; a cathode layer "20"; and an electrolyte layer "12", wherein the electrolyte layer includes a yttria stabilized zirconia layer that is deposited on a substrate "30" selected from the group consisting of single crystalline silicon, polycrystalline silicon, silicon oxide containing dielectric substrates, alumina, and sapphire (See paragraphs [0045],[0084],[0087],[0094] and Figure 13). In addition, it also discloses an electrolyte

layer that has a thickness ranging between about 2 microns and about 5 microns (See claim 4).

Examiner's note: It is noted that the instant claim is being construed as product-by-process and that the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production (In re Brown 173 USPQ 685 and In re Fessman 180 USPQ 324, See MPEP 2113: Product-by-Process claims).

However, Kearnl does not expressly teach a water soluble polymer that is at least one of polyvinyl alcohol, starches, hydrocolloids, cellulose ethers, polyethylene oxides, polyacrylates, polyacrylamides, polyamines, polyimines, or mixtures thereof. The Hata reference discloses a solid electrolyte film that contains an organic binder such as acrylate-based or methacrylate based copolymers, vinyl alcohol based resins, or cellulose (See column 12, line 62 to column 13, line 27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kearnl electrolyte layer to include a water soluble polymer that is at least one of polyvinyl alcohol, cellulose ethers, polyacrylates, or mixtures thereof in order to increase the strength and flexibility of the electrolyte layer.

4. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kearnl (US 2002/0155335) in view of Hata et al (US 6902790) as applied to claim 24 above, and further in view of Ishihara et al (US 5175063).

However, Kearnl as modified by Hata et al does not expressly teach an electronic device comprising a load and the fuel cell of claim 24 connected to the load. The

Ishihara reference teaches a fuel cell generator comprising a SOFC element array "11" connected to a load "40" (See Figure 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Kearl/Hata fuel cell to include a load connected to the fuel cell in order to efficiently utilize the power generated by the fuel cell in a practical application.

Response to Arguments

5. Applicant's arguments, see Remarks, filed 9/19/07, with respect to the rejection(s) of claim(s) 24-33, 35-41, 49, and 50 under 35 USC 102/103 have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kearl (US 2002/0155335).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 7:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/696,447
Art Unit: 1795

Page 5

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC



JONATHAN CREPEAU
PRIMARY EXAMINER